

**Achievement of Market-Friendly Initiatives and Results Program
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Securities Depository Center (SDC) Jordan

Settlement Bank Network Preparation

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This report was prepared by Eugene P. Callan, in collaboration with Chemonics International Inc., prime contractor to the U.S. Agency for International Development for the AMIR Program in Jordan.

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Settlement Bank Qualification

Section I

Executive Summary

Executive Summary

1.00 Background

In recent years the increasing globalization of financial markets has resulted in Securities Settlement Systems becoming a critical component of the infrastructure of the overall global financial marketplace. The volume of trading and settlement transactions have increased dramatically as financial markets have become an increasingly important channel for intermediating flows of funds between borrowers and lenders and as investors have managed their securities portfolios more actively. Volumes of cross-border trades and settlements have grown especially rapidly, reflecting the increasing integration of global markets.

Weaknesses in Securities Settlement Systems can be a source of systemic disturbances to financial markets and to other payment and settlement systems. A financial or operational problem at any of the institutions that perform critical functions in the settlement process or at a major user of a Securities Settlement System could result in significant liquidity pressures or credit losses for many participants in the marketplace. Any disruption in securities settlement has the potential to spill over to payment systems used by the prime Securities Settlement System or any payment systems that use the Securities Settlement System to transfer collateral. In financial markets themselves, market liquidity is critically dependent on confidence in the safety and reliability of the settlement operations. It is a generally accepted axiom that securities traders in the financial markets will be reluctant to trade if they have significant doubts as to whether they will receive moneys or securities due from purchase and/or sale transactions.

1.02 International Standards

The need for international standards to promote improvements in the safety and efficiency of securities settlement was clearly demonstrated by the impact of the Group of Thirty's (G30) 1989 standards¹. Although the G30's recommendations have not been fully implemented in all markets, they have unquestionably fostered significant progress in many mature, transition and emerging financial markets. Since 1989 the G30 standards have been modified by relevant international standard-setting bodies to keep pace with developments in the global financial markets. The relevant international standard-setting bodies assuming responsibility for the promotion of marketplace standards are the Committee on Payment and Settlement Systems (CPSS) of the Central Banks of the Group of Ten countries and the International Organization of Securities Commissions (IOSCO).

¹ Group of Thirty, *Clearance and Settlement Systems in the World's Securities Markets* (Group of Thirty, 1989).

Joint efforts between the CPSS and IOSCO's Technical Committee resulted in agreement that cooperative development of new recommendations for security settlement systems by securities regulators and Central Banks would facilitate further progress in making such arrangements safer and more efficient.

In December 1999 the CPSS and the Technical Committee of IOSCO created the Task Force on Securities Settlement Systems. The Task Force was comprised of 28 Central Bankers and Securities Regulators from 18 countries, regions and the European Union. The Task Force's mandate called for the promotion the implementation of measures that would enhance international financial stability, reduce risks, increase efficiency and provide adequate safeguards for investors by developing recommendations for the design, operation and oversight of Securities Settlement Systems. The work of the Task Force resulted in the creation of 19 specific recommendations for Securities Settlement Systems.

The Task Force recommendations identify minimum standards that Securities Settlement Systems should meet. The recommendations are designed to cover systems for all types of securities, for securities issued in both industrialized and developing countries, and for domestic as well as cross-border trades.

1.03 SDC Settlement Banks & International Standards

In Jordan, requirements for the Securities Depository Center's Settlement Banks were established according to the Task Force's 19 recommendations. Although the Settlement Bank requirements established with the SDC adhered to all of the Task Force's recommendations, modifications were made with SDC management to accommodate existent local business culture, securities regulations and the rules of the Central Bank of Jordan. The Task Force recommendations specifically addressed in constructing the SDC's Settlement Bank requirements are summarized in the table, below.

NUMBER	TOPIC	REQUIREMENT
3	Settlement Cycle	Rolling settlement should be adopted in all securities markets. Final settlement should occur no later than T+3. The benefits and costs of a settlement cycle shorter than T+3 should be evaluated.
7	Delivery Versus Payment (DVP)	CSDs should eliminate principal risk by linking securities transfers to funds transfers in a way that achieves Delivery versus Payment.
8	Timing of Settlement Finality	Final settlement should occur no later than the end of the settlement day. Intraday or real-time finality should be provided where necessary to reduce risks.

NUMBER	TOPIC	REQUIREMENT
10	Cash Settlement Assets	Assets used to settle the ultimate payment obligations arising from securities transactions should carry little or no credit or liquidity risk. If central bank money is not used, steps must be taken to protect CSD members from potential losses and liquidity pressures arising from the failure of the cash settlement agent whose assets are used for that purpose.
11	Operational Reliability	Sources of operational risk arising in the clearing and settlement process should be identified and minimized through the development of appropriate systems, controls and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Contingency plans and backup facilities should be established to allow for timely recovery of operations and completion of the settlement process.
14	Access	CSDs and CCPs should have objective and publicly disclosed criteria for participation that permit fair and open access.
15	Efficiency	While maintaining safe and secure operations, Securities Settlement Systems should be cost-effective in meeting the requirements of users.
16	Communications Procedures & Standards	Securities Settlement Systems should use or accommodate the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions.
18	Regulation & Oversight	Securities Settlement Systems should be subject to transparent and effective regulation and oversight. Central Banks and Securities Regulators should cooperate with each other and with other relevant authorities.

1.04 Current Cash Settlement

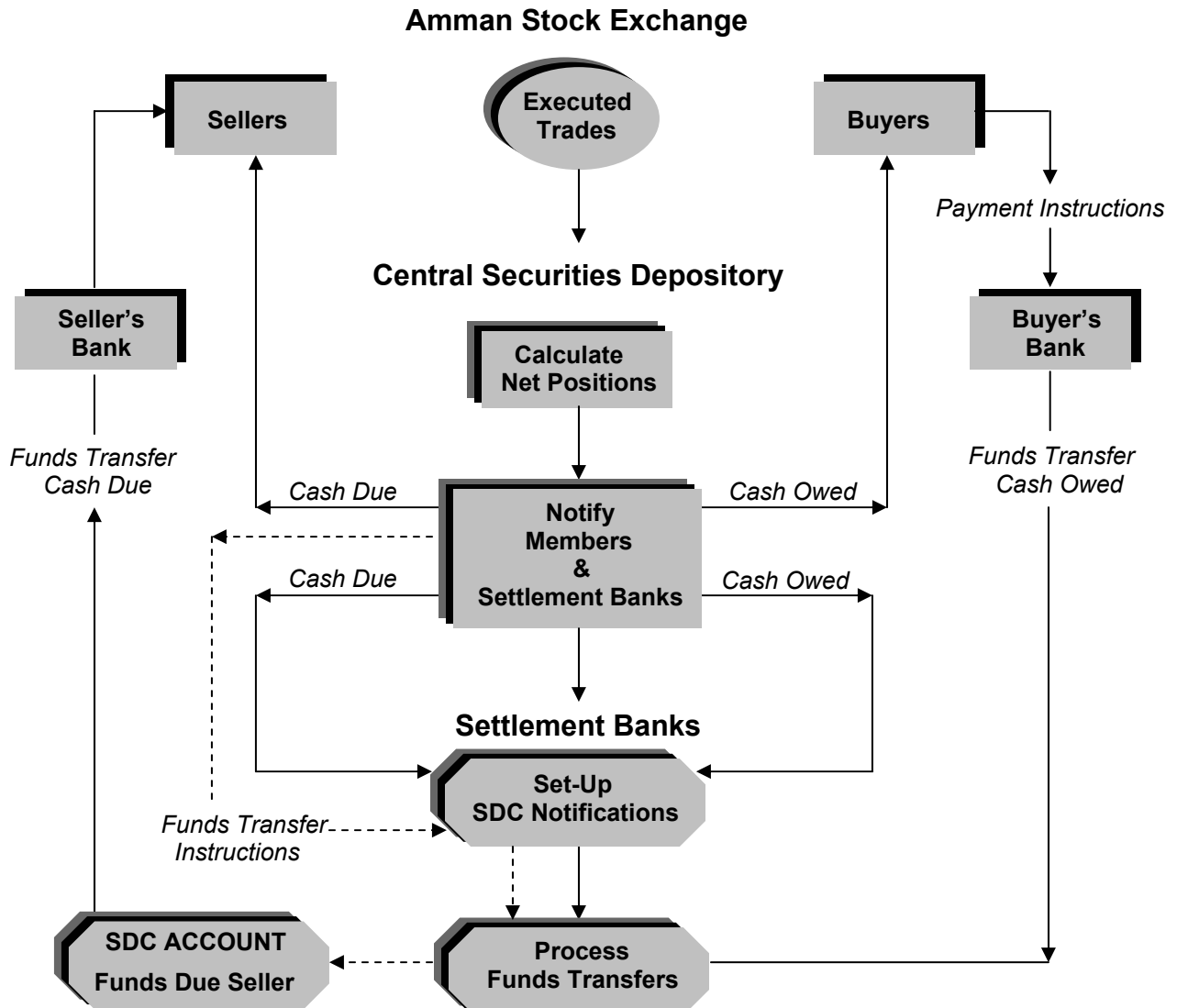
Currently in the Jordanian financial markets the Cash Settlement is affected separately outside of the operational control of the SDC. At present the SDC transfers securities from a seller's account to a buyer's account based on executed trade instructions received from the Amman Stock Exchange (ASE) and the availability of securities in the seller's account. The availability and timely payment of cash required by the conditions of the executed trade contract can not be fully managed by the SDC and as such the Payment segment, or P segment, of DVP is incomplete.

The lack of operational control over the cash portion of the settlement process impacts the SDC's ability to provide full Delivery versus Payment (DVP) in a manner that is compliant with global standards.

1.05 Proposed Cash Settlement

In order to increase the reliability, safety and credibility of securities settlement in Jordan financial markets the SDC will implement a Settlement Bank Network (SBN). Implementation of the SBN will require members of the SDC who are net buyers on any given settlement day to pay their cash settlement obligations through two banks approved and authorized by the SDC. SDC members who are net sellers on any given settlement day will receive cash payments due through the SDC Settlement Banks.

CASH SETTLEMENT THROUGH SETTLEMENT BANKS



1.06 Proposed Cash Settlement – SDC Benefits

In processing all cash settlement payments through the Settlement Banks the SDC gains control of cash payments related to the settlement of securities trades.

In instances where either the buyer or the seller of securities is unable to meet their SDC securities delivery or cash payment obligations, the SDC is provided with viable options that will insure the continuity of securities settlement in the financial markets. Market participants purchasing or selling shares in good faith will not be penalized by the failure of a contraparty. Buyers of securities will have the highest possible assurance that shares purchased on the ASE will be available to the buyer to resell back into the marketplace or available for any disposition the buyer has intended. Sellers of securities will also have the highest possible assurance that the cash proceeds from shares sold on the ASE will be available for reinvestment or other purposes. Aside from increasing the safety and credibility of the SDC's settlement services, the implementation of the SBN will have a positive effect on the financial market's liquidity. The table, below, provides an illustration of the SDC options that may be utilized to insure the continuity of securities settlement when a potential settlement problem occurs.

SETTLEMENT PROBLEM	SDC OPTION
Securities Fail <ul style="list-style-type: none"> ▸ Securities required are not available in Seller's position at the SDC ▸ Buyers funds have been deposited in SDC's Settlement Bank Account 	SDC may: <ul style="list-style-type: none"> ▸ Withhold funds from Seller ▸ Use funds withheld to purchase shares in the open market ¹ ▸ Deliver shares purchased in the open market to the Buyer ▸ Provide Buyer with option of accepting trade cash amount in lieu of shares
Cash Fail <ul style="list-style-type: none"> ▸ Securities required are available in the Seller's position at the SDC ▸ Buyer's funds have not been deposited in the SDC's Settlement Bank Account 	SDC may: <ul style="list-style-type: none"> ▸ Withhold securities from Buyer ▸ Sell securities in open market ▸ Credit open market sale proceeds to Seller ▸ Debit SGF for any difference between open market sale and original trade contract amount ▸ Recover SGF debited amount from Buyer ▸ Levy penalties on Buyer, as required
Securities & Cash Fail <ul style="list-style-type: none"> ▸ Securities required are not available in the Seller's position at the SDC ▸ Buyer's funds have not been deposited in the SDC's Settlement Bank Account 	SDC may: <ul style="list-style-type: none"> ▸ Cancel original trade

¹ In 2003 the SDC will establish a member-funded Settlement Guarantee Fund (SGF) to enhance settlement finality. In cases where the acquisition cost of shares in the open market exceeds the trade contract amount, the SDC will debit the SGF to make up the difference. The selling SDC member will be required to pay the SDC the full open market acquisition amount plus a penalty assessed by the SDC.

1.07 Settlement Bank Requirements

The qualification requirements for Settlement Bank candidates were constructed as a joint effort between SDC management, SDC legal staff and the AMIR Project's Financial Markets Development Consultant. The requirements were created in a seven-step process:

- I. Determination of Basic SDC Requirements
- II. Peer Market Requirements Review
- III. SDC Requirements & Peer Market Requirements Comparison
- IV. International Standards Comparison
- V. Final SDC Requirements Determination
- VI. SDC Legal Staff Review
- VII. SDC Management Review

Based on information gathered during Steps I through VI, above, a Settlement Bank Request for Proposal (RFP) document was created.

1.08 Settlement Bank Request for Proposal (RFP)

A Settlement Bank RFP was created in order to solicit responses from qualified institutions, create a short-list of qualified candidates and select one or more institutions as SED approved Settlement Bank(s).

The RFP incorporated the final SDC requirements into RFP formats from international donor agencies and the financial markets private sector:

- United States Agency for International Development (USAID)
- The Asian Development Bank (ADB)
- The Inter-American Development Bank (IDB)
- The Nasdaq Stock Market (NASDAQ®)

The RFP document, in draft format, was reviewed by the SDC's legal staff and was finalized after amendments appropriate to the Jordan Financial Markets were made.

In addition to SDC operational and technical requirements the RFP document contained specific requirements related to the conditions of participating in the RFP process. In the interests of fairness, impartiality and transparency it was deemed prudent that all participating institutions be provided with a clear understanding of the RFP process and the roles, responsibilities and obligations of all participants in the process.

Subsequent to a final SDC management review the final RFP document was issued, in Arabic, to twelve (12) potential candidate institutions.

1.09 RFP Process

The SDC distributed the RFP to the twelve (12) banking institutions initially selected as potential Settlement Bank(s) in September 2002. The RFP participation conditions allowed institutions receiving the RFP a period of five (5) weeks in which to respond. Additionally, the RFP participation conditions provided SDC e-mail and telephone points of contact through which clarification inquiries could be made.

Two weeks prior to the submission deadline each participating institution was contacted and reminded of the submission deadline. Two of the institutions contacted requested an extension of one week which was granted by the SDC. Subsequent to granting the extension to the two requesting institutions the overall deadline was extended and all of the remaining ten (10) institutions were notified.

A total of twelve (12) institutions complied with the extended submission deadline and the SDC commenced its two-part REF review process. The first part of the RFP review process consisted of evaluating each institution's proposal and creating a short-list of qualified candidates. The second portion of the process consisted of selecting a final Settlement Bank(s).

During the first portion of the review process meetings were conducted with two institutions in order to clarify several of each institution's responses. At the conclusion of the first portion of the review process a short-list of six (6) potential Settlement Banks was created.

1.10 RFP Results – Settlement Banks

In the second portion of the review process meetings were held with each short-listed institution to clarify various responses as submitted and to make SDC inquiries related to value-added services that could be provided for future use. At the conclusion of the second portion of the review process the SDC chose one domestic bank, The Housing Bank for Trade and Finance and one international bank Citibank, N.A. (Jordan) as the SDC's designated Settlement Banks. Summary information on both of the institutions selected is attached to this report as *Appendix A – SDC Designated Settlement Banks' Profiles*

1.11 RFP Results – Contracts

In order to secure the services of the institutions chosen as Settlement Banks, the SDC will commence contract negotiations during the week of December 30, 2002 and complete sign services contracts with the Settlement Banks during the week of January 5, 2003.

1.12 RFP Results – Testing

On completion of the service contract process the SDC will begin operational and technical testing with the Settlement Banks during the week of January 4, 2003.

Testing of the Settlement Bank Network will be based on Test Scripts prepared by the SDC in conjunction with the AMIR Project's Financial Markets Development consultant.

Testing of the Settlement Bank Network will also include settlement simulations with all of SDC member firms. The testing process will run from January 5, 2003 through January 23, 2003.

1.13 RFP Results – Implementation

At the completion of the testing period test results will be reviewed by the SDC, the Settlement Banks and a cross-section of SDC member firms.

The Settlement Bank Network is scheduled to be operational on February 2, 2003

1.14 Standards & Suitability

As with the implementation of other major settlement processing components, the SDC has invested a considerable amount of time and effort in the selection of its Settlement Banks and the implementation of its Settlement Bank Network.

Based on the RFP process and selection methodology it is correct to state that the SDC Settlement Bank Network to be implemented by the SDC is compliant with generally accepted global standards and conforms to international best practices for Cash Settlement.

Settlement Bank Qualification

Section II

Background

2.00 Clearance & Settlement Background

As mentioned in this report's Executive Summary, the increasing globalization of financial markets has resulted in Securities Settlement Systems becoming a critical component of the infrastructure of the overall global financial marketplace. Safe and reliable settlement systems are essential for the stability, safety and credibility of a country's financial markets. Due to the interconnectivity of financial institutions and their transactions, safe, secure and reliable Securities Settlement Systems are essential to operational sustainability of a country's money transfer system and in turn to the soundness of a country's economy. Disruptions in a Securities Settlement System can very quickly ripple through a national payment system and result in the disruption of financial commerce.

The importance of Securities Settlement Systems has long been recognized by international organizations such as the International Organization of Securities Commissions (IOSCO), the Bank for International Settlements (BIS) and the Central Banks of the Group of Ten Countries (G10). In 2001 a Joint Task Force was created by IOSCO and the Committee on Payment and Settlement Systems (CPSS) of G10 with participation by:

Joint Task Force – IOSCO & CPSS

COUNTRY	INSTITUTION
Australia	Australian Securities & Exchange Commission
Belgium	National Bank of Belgium
Brazil	Comissão de Valores Mobiliários
China	The Peoples Bank of China
Czech Republic	Czech National Bank
European Union	European Central Bank
France	Commission des Opérations de Bourse
France	Bank of France
Germany	Deutsche Bundesbank
Hong Kong	Securities and Futures Commission
India	Reserve bank of India
India	Securities and Exchange Board of India
Italy	Commissione Nazionale per le Società e la Borsa
Japan	Bank of Japan
Japan	Financial Services Agency
Malaysia	Securities Commission of Malaysia
Mexico	Comisión Nacional Bancaria y de Valores
Mexico	Bank of Mexico
Netherlands	Securities Board of the Netherlands
Saudi Arabia	Saudi Arabian Monetary Agency
Spain	Comisión Nacional del Mercado de Valores
United Kingdom	Bank of England
United States	Federal Reserve Bank – Board of Governors
United States	United States Securities and Exchange Commission
United States	United States Commodity Futures Trading Commission

The mandate of the Task Force was to develop and promote the implementation of minimum standards to enhance domestic and international financial stability, reduce risks, increase efficiency and provide adequate safeguards for investors. The Task Force's recommendations identified minimum standards that settlement systems should meet and were designed to cover Securities Settlement Systems for all securities, including equities and corporate and government bonds and money market instruments for securities issued in industrialized and developing countries.

2.01 Clearance & Settlement Components

As commonly performed the clearance and settlement of securities transactions includes a full set of institutional arrangements for the confirmation, clearance and settlement of securities trades and the safekeeping of securities. The institutional arrangements for clearance and settlement generally include:

Confirmation: Notification of the terms of a trade made directly to the trade's participants.

Clearance: Calculation of the obligations of the counterparties resulting from the Confirmation process

Delivery: Final transfer of securities in exchange for the final transfer of funds required to settle trade contract obligations

Payment: Final transfer of funds in exchange for the final transfer of securities required to settle trade contract obligations

Each of these steps can typically be accomplished in one or more ways. In addition, other important activities may take place within or ancillary to each of these steps. Such activities include the confirmation of trade details between direct market participants and indirect market participants such as institutional investors and foreign investors or their agents. The communication of settlement instructions to central securities depositories and to custodians that investors may use to safekeep their securities, and the registration of the ownership of shares.

2.02 Trade Confirmation and Affirmation

Subsequent to the execution of a trade the first step in the Clearing and Settlement process is to ensure that the buyer and seller as counterparties to the trade agree on the terms of the trade. Agreement is usually required as to the security involved, the price, the amount to be bought/sold, the settlement date and the counterparty identity.

Trade confirmation can take place in a variety of ways, and the trading mechanism itself often determines how it occurs. In an electronic trading system a confirm is produced automatically upon execution of a trade and affirmed by at least one counterparty. In

some cases confirms are issued by clearing corporations or trade associations based on data submitted to them by the counterparties.

Due to the fact that counterparties to trades are often acting on behalf of others, an important ancillary part of the trade confirmation process is the transmission of trade information to primary investors. In order for settlement to be completed, investors must confirm trade details and issue instructions for the proper positioning of funds and securities. Direct counterparties to a trade are typically responsible for performance of a transaction, regardless of whether the investors they are acting for agree that they have correctly executed instructions. The process by which indirect market participants, or primary investors, confirm or affirm the details of a transaction and issue settlement instructions to their custodians is important because it provides an early indication of trades for which payment or delivery may be problematic. The process by which indirect market participants confirm or affirm trades and issue settlement instructions can be complex, in part because information may need to be transmitted to the direct market participant about the allocation of trades among various accounts of a primary investor. Additional complexity often arises in cross-border trades because multiple intermediaries and custodians may be involved.

As the result of participants' agreement to buy and sell securities in a public exchange or market, electronic trading systems will generate a trade execution and in many cases an electronic confirmation/affirmation. Subsequent to execution of a trade electronic trading systems will normally generate an agreed upon trade contract in electronic form that is generally referred to as Locked-In Trade. Locked-In Trades are usually transmitted by securities exchanges or markets to a Central Securities Depository (CSD) for Clearing and Settlement.

2.03 Trade Clearance

After trades have been confirmed, the next step in the process is clearance, the computation of the obligations of the counterparties to make deliveries or to make payments on the settlement date.

Clearance most often occurs in one of two ways. Many systems compute the obligations for every trade individually wherein clearance occurs on a gross or trade for trade basis. In other systems, the obligations are subject to netting. In larger, mature markets, a Central Counterparty (CCP) interposes itself between the buyers and sellers to a securities trade, taking on each party's obligation in relation to the other. By achieving netting of the underlying trade obligations, the use of a CCP reduces Replacement Cost Risk, Principal Risk and Liquidity Risk for the trade counterparties. Netting arrangements are increasingly common in securities markets with high volumes of trades because properly designed netting produces very significant reductions in gross exposures.

2.04 Trade Settlement

Settlement of a securities trade involves the final transfer of the securities from the seller to the buyer and the final transfer of funds from the buyer to the seller.

At one time securities transfers involved the physical movement of security certificates. However, in recent years, most markets have eliminated physical security certificates from the settlement process by creating a Central Securities Depository (CSD) where securities are held electronically in dematerialized, book-entry form. Immobilization or dematerialization enables securities transfers to occur through electronic accounting entries on the books of a CSD. In some markets CSDs have been permitted to offer funds accounts and permit funds transfers on its own books as a means of payment for securities. Alternatively, these funds transfers may occur on the books of another institution, such as a Central Bank or commercial bank.

The processing of settlement transfer instructions by a Securities Settlement System and a funds transfer system often involves several stages during which the rights and obligations of the Buyer and the Seller are significantly different.

In some markets books may be debited or credited, but the transfer is provisional and one or more parties retain the right by law or agreement to rescind the transfer. If the transfer can be rescinded by the sender of the instruction, the transfer is said to be revocable. Even if the instruction is irrevocable, if a party such as the system operator or a liquidator can rescind the transfer, the transfer is considered to be provisional. When the transfer becomes final, that is, an irrevocable and unconditional transfer, the settlement obligation is discharged.

Final transfer of a security by the seller to the buyer constitutes delivery, and final transfer of funds from the buyer to the seller constitutes payment. When delivery and payment have occurred, the settlement process is complete.

Many settlement systems have associated Shareholder Registries, maintained by entities known as Registrars, in which ownership of securities is listed on the records of the issuer. Registrars typically assist issuers in communicating with securities shareholders about corporate actions, dividends, Annual Meetings, proxy voting, etc... In some markets, securities may be registered in the name of a broker-dealer or custodian rather than that of the ultimate investor. These types of arrangements are commonly referred to as Indirect Holding Systems. In other markets, the beneficial or ultimate owner is specifically represented on the issuer's Shareholder Register, which may be the records of the CSD, a Transfer Agent/Registrar or the issuer itself. This is commonly known as a Direct Holding System.

2.05 Shareholder Registers

The efficiency of the shareholder registration system has important implications for the Clearing and Settlement process because it determines the ease and speed with which full legal title to securities can be transferred. Generally accepted global best practices require that full legal title may not be obtained until settlement of the trade contract is complete with securities being delivered in good order and the payment of funds completed. It is also generally accepted global best practice that the delivery of securities in settlement of a securities trade be completed when, and only when, the corresponding payment of funds is also made. In global financial markets this tenet is called Delivery versus Payment (DVP).

Historically, the generally accepted practice in Jordanian financial markets has been to vest the buyer of securities with legal ownership rights at the point of trade execution and not at the point where irrevocable DVP is completed. In the execution of a securities trade vesting the Buyer with ownership rights is not compliant with generally accepted global standards and complicates the settlement process. Amendments proposed to the Jordan Securities Law, as enacted, may modify this practice. However, in the interim the SDC will continue to base the operation of its Securities Settlement System on the existent Securities Law and current marketplace procedures. In the event that material changes to current marketplace procedures are required as a result of the enactment and publication of amendments to the Security Law, the SDC will adjust the operation of its Securities Settlement System accordingly.

Settlement Bank Qualification

Section III

Risk Assessment

3.00 Clearance & Settlement Risk

Securities Settlement Systems are confronted with a variety of risks that must be identified, understood and managed. A failure to effectively manage the risks normally associated with the Clearing and Settlement process will result in the disruption of the financial markets securities and funds transfer.

The variety of settlement system risks includes, but is not limited to, Credit Risk or the risk that participants will not settle obligations either when due or at any time thereafter. There is always the possibility of Liquidity Risk resulting from participants settling obligations late. If a commercial bank is used for money settlements, the failure of such an institution can create both Credit Risk and Liquidity Risk within the Securities Settlement System and the financial markets. Securities Settlement Systems are susceptible to other risks such as Custody Risk that arise from the mishandling of safekeeping responsibilities and misadministration of securities on behalf of others. The increased reliance of financial markets on electronic data processing to insure efficient and cost-effective Clearing and Settlement has amplified Operational Risk caused by deficiencies in information systems and/or internal controls.

A failure on the part of a country's legal system to support and enforce the rules and procedures of a Securities Settlement System exposes the financial markets to Legal Risk.

Additionally, if the failure of one participant in the financial markets renders other participants unable to meet their obligations, the settlement system will be a source of Systemic Risk which can, in turn, cause instability for financial markets more generally.

The variety of risks inherent in financial markets have been included in this report due the fact that all of the risks cited are connected in some manner to the effectiveness or ineffectiveness of a CSD's management of Cash Settlement and in the case of the SDC, the operational, technical and financial soundness of institutions chosen as Settlement Banks.

2.01 Credit Risk

In global markets Credit risk is generally defined as the risk of loss from default by a participant, typically as a consequence of insolvency.

Two primary types of Credit Risk are usefully present in financial markets: Pre-Settlement Risk and Settlement Risk. Pre-Settlement Risk is also referred to as Replacement Cost Risk, that is, the risk of loss of unrealized gains on unsettled contracts with the defaulting participant. Settlement Risk is sometimes termed Principal Risk or the risk of the loss of securities delivered or payments made to the defaulting participant prior to detection of the default. Settlement risk also involves Liquidity Risk that can arise on the settlement date.

Replacement Cost Risk occurs as the result of a failure to perform on the part of one party to a transaction which leaves the solvent counterparty with the need to replace, at current market prices, the original transaction. When the solvent counterparty replaces the original transaction at current market prices, however, it will lose the gains that had occurred on the transaction in the interval between the time of trade execution and the default. The unrealized gain, if any, on a transaction is determined by comparing the market price of the security at the time of default with the contract price. The seller of a security is exposed to a replacement cost loss if the market price is below the contract price, while the buyer of the security is exposed to such a loss if the market price is above the contract price. Because future securities price movements are uncertain at the time of the trade, both counterparties face Replacement Cost Risk. The magnitude of Replacement Cost Risk depends on the volatility of the security price and the amount of time that elapses between the trade date and the settlement date. The replacement cost component of credit risk can be reduced by compressing the time between trade execution and settlement. It may also be reduced by implementing legally binding trade netting systems.

Due to the realistic possibility of market participants becoming insolvent and the resultant Replacement Cost Risk, it was critical that the SDC select as Settlement Banks only those institutions capable of providing the highest possible levels of time-sensitive funds transfer processing to insure strict adherence to the SDC's Cash Settlement requirements.

Another form of credit risk arises in connection with executed trade contracts scheduled to settle on the date on which a counterparty default may occur. On such contracts, the non-defaulting counterparty may be exposed to Principal Risk, or the risk that the seller of a security could deliver but not receive payment or that the buyer could make payment but not receive delivery. If either of these events occurred, the entire principal value of the transaction would be at risk, hence the term principal risk.

Both the buyer and the seller of a security may be exposed to Principal Risk. The buyer is at risk if it is possible to complete payment but not receive delivery, and the seller is at risk if it is possible to complete delivery but not receive payment. Principal Risk can be eliminated through use of Delivery versus Payment (DVP) Settlement. DVP Settlement links a securities transfer, or Delivery system to a funds transfer, or Payment system to ensure Delivery occurs if and only if Payment occurs. Principal risk is of particular importance because it involves the full value of securities transferred, and in the event of default it may entail credit losses so sizeable as to create systemic problems throughout the financial markets.

In order for the SDC to implement DVP Settlement and eliminate Principal Risk it was critical for the SDC to select as Settlement Banks only those institutions that were deemed capable of meeting the SDC's Cash Settlement requirements.

2.02 Liquidity Risk

The seller of a security who does not receive timely payment may have to borrow or liquidate assets to complete other payments and as such is exposed to Liquidity Risk.

Liquidity Risk also includes the risk that a buyer of securities does not receive timely delivery of securities and as a result may have to borrow securities in order to complete the buyer's own delivery obligation. Thus, both parties to a securities trade are exposed to Liquidity Risk on the settlement date. The costs associated with liquidity risk depend on the liquidity of the markets in which the affected party must make its adjustments. The more liquid the markets, the less costly the adjustment.

Liquidity Risk has the potential to create systemic problems, particularly if it occurs at a time when securities prices are changing rapidly and failures to meet obligations when due are more likely to create concerns about solvency. In the absence of a strong linkage between the securities Delivery system and the funds Payment system, the emergence of systemic liquidity problems at such times is especially likely, as the fear of a loss of the full principal value of securities or funds could induce some participants to withhold deliveries and payments, which, in turn, may prevent other participants from meeting their obligations.

Mitigation of Liquidity Risk is possible by strengthening the linkage between a market's securities Delivery system and the market's funds Payment system. Specifically for this reason the selection, by the SDC, of operationally and financially sound institutions as Settlement Banks is critical to the orderly conduct of business in the Jordan financial markets.

2.03 Liquidity Risk - Settlement Banks

Financial market participants in a Securities Settlement System may face the risk of a Settlement Bank failure. The failure of any bank that provides cash accounts to settle payment obligations for CSD members could disrupt settlement and result in significant losses and liquidity pressures for those members. The impact on CSD members is particularly severe in markets where all CSD members were required to use a single Settlement Bank. Thus, if the use of a single Settlement Bank is required, it is usually the Central Bank of issue or a limited purpose bank with strong risk controls and access to sizeable financial resources. Alternatively, the risk of Settlement Bank failure may be controlled and diversified by allowing CSD members to choose among multiple private Settlement Banks.

In the interest of mitigating the level of Liquidity Risk associated with the failure of a Settlement Bank, the SDC selected one domestic bank and one international bank. The SDC's RFP for Settlement Bank services required that market SDC members could retain their individual banking relationships with the participation prerequisite that all settlement funds must be paid to the SDC's accounts at either of the SDC-designated Settlement Banks.

Additionally, the SDC's RFP for Settlement Bank services required a high level of financial disclosure by respondents including information from independent auditing firms. The RFP was structured in a manner that provided the SDC with a wide scope of detailed information related to the financial and operational soundness of institutional candidates.

2.04 Custody Risk – Depository Members

Custody Risk arises from the mishandling and inefficiencies associated with the safekeeping and administration of securities and financial instruments on behalf of others.

Users of custodial services face risk from the potential loss of securities in the event that the holder of the securities becomes insolvent, acts negligently or commits fraud. Even if there is no loss of the value of the securities held by the custodian or sub-custodian, the ability of participants to transfer the securities might temporarily be impaired. Custody risk is particularly important for indirect participants in Securities Settlement Systems whose securities are held in custody by direct participants who in turn hold the assets at a CSD.

Timely and efficient transfer of assets associated with the settlement of securities transactions is, in a large part, related to the ability of a financial market's CSD to provide DVP Settlement. A key element in the CSD's ability to offer and sustain DVP Settlement services is the reliability of the CSD's Settlement Bank. In cases where the CSD's Settlement Bank is inefficient or negligent in managing the Cash component of DVP, the resultant effects will ripple throughout the financial services marketplace.

In order to insure operational and economic stability in the financial markets it is mandatory that a CSD provide the highest possible levels of reliability in Cash and Securities settlement.

In selecting its Settlement Banks the SDC has taken great care to mandate the highest levels of financial, operational and technical performance. Additionally, the SDC constructed its RFP process in a manner that required respondent institutions to provide empirical data to support their service sustainability levels.

2.05 Operational Risk

Operational Risk is the risk of unexpected losses as a result of deficiencies in systems and controls, human error or management failure.

This type of risk can reduce the effectiveness of other measures a Securities Settlement System takes to manage risk. If Operational Risk is not managed or badly managed it will impair the Securities Settlement System's ability to complete settlement which in turn can create liquidity pressures for the CSD itself and/or its participants. Operational Risk can also hamper a Securities Settlement System's ability to monitor and manage participants' credit exposures.

The most common sources of Operational Risk are operational failures including errors or delays in processing, system outages, insufficient capacity or fraud by staff.

In establishing its Settlement Bank requirements the SDC was sensitive to Operational Risk and its effect on the financial markets. The RFP for Settlement Bank Services issued by the SDC required respondents to provide current levels of data processing capacity and historic downtime documentation. The RFP also required respondents to provide detailed technical specifications related to respondent institution's Disaster Recovery and Business Resumption plans.

The SDC's process for reviewing RFP responses was equally sensitive to the potential of a Settlement Bank's performance lapses to disrupt the overall settlement process. It can be stated that the SDC's issuance and review process for the Settlement Services RFP were conducted in a manner that will provide the highest possible levels of Operational Risk mitigation.

2.06 Legal Risk

In global markets Legal Risk is generally defined as the risk that a financial market participant will suffer a loss because laws or regulations do not support the rules of the Securities Settlement System, the performance of related settlement arrangements, or the property rights and other interests held through the settlement system.

Loss and Legal Risk can also arise if the application of a jurisdiction's laws and regulations is uncertain. Legal Risk includes the risk a counterparty faces from an unexpected application of a law that renders contracts illegal or unenforceable. It also includes the risk of loss resulting from a delay in the recovery of funds or securities or a freezing of positions. It is not uncommon for international investors participating in an unfamiliar market to suffer a loss resulting from the application of a different law than they had expected or had specified in a contract, by a court in a relevant jurisdiction. Legal risk can exacerbate other risks, such as Market, Credit or Liquidity risk, relating to the integrity of transactions.

As with most CSDs, the SDC has limited control over the occurrence of Legal Risk. However, in order to provide a reasonable level of Legal Risk mitigation the SDC RFP required that candidates for Settlement Bank designation be in good standing with the domestic banking regulator – the Central Bank of Jordan. Respondents to the RFP were also required to provide the SDC with any regulatory or non-compliance problems that had occurred with the Central Bank of Jordan over the past three (3) years. In its contractual arrangements with the selected Settlement Banks the SDC requires that each Settlement Bank conduct its business and its business with the SDC in a manner that is fully compliant with Jordanian law and with the rules and regulations of the Central Bank. In effect the SDC is utilizing the Central Bank of Jordan as a means of mitigating Legal Risk in the financial markets.

2.07 Systemic Risk

Systemic Risk is the risk that the inability of one financial markets institution to meet its obligations when due will cause other financial market institutions, in turn, to fail to meet their obligations when due.

The possibility that the liquidity and credit problems precipitated by these failures to perform will disrupt financial markets and impair the functioning of payment and settlement systems is a serious concern for CSDs. By the very nature of what they do, Securities Settlement Systems can create significant Credit, Liquidity and other risks for their participants. Payment systems and clearing systems for other financial instruments often depend critically on Securities Settlement Systems because of their use of securities as collateral in their own Risk Management procedures. Market liquidity in securities markets is largely dependent on participants' confidence in the safety and reliability of settlement systems. It is important that the risks in Securities Settlement Systems be appropriately managed in order that such systems are not a source of systemic disturbances to the financial markets and other payment and settlement systems.

Although a CSD can not control the financial stability of its members, the CSD does have an obligation to provide the highest levels of timely and reliable securities settlement services. The SDC, as the sole CSD in Jordan, has consistently sustained its commitment to providing such services. The SDC's commitment has been extended to include its selection of Settlement Banks via its RFP issuance and review process.

2.08 Risk Qualification Assessment

Based on its own requirements and the incorporation of global standards for Securities Settlement Systems, the SDC created a comprehensive RFP for the procurement of Settlement Bank Services. The RFP contained requirements that respondents supply specific information, based on empirical data, as to how they would meet the SDC's business, operational, technical and service support requirements.

On receipt of responses from qualified banking institutions the SDC performed a comparative evaluation on each individual response and on each individual response's content in relation to all responses received.

As a result of the RFP issuance and evaluation process it can be stated that the SDC has chosen as Settlement Banks those institutions that are the most capable of sustaining the SDC's Settlement Services on a DVP basis.

Settlement Bank Qualification

Section IV

International Standards

4.00 Settlement Banks & International Recommendations

Several international initiatives completed in the past few years have attempted to maintain financial stability by strengthening financial markets' infrastructure.

The International Organization of Securities Commissions (IOSCO) has developed *Objectives and Principles of Securities Regulation* (IOSCO, 1998) and the Committee on Payment and Settlement Systems (CPSS) of the Central Banks of the Group of Ten Countries has produced the *Core Principles for Systemically Important Payment Systems* (BIS, 2001). In December of 1999 IOSCO and the CPSS jointly established the Joint Task Force on Securities Settlement Systems (the Task Force) to contributed further to the global standardization process. In January of 2002 the IOSCO and CPSS Joint Task Force issued *Recommendations for Securities Settlement Systems*. (BIS 2002).

Work performed by the Task Force was representative of the world's financial markets. The Task Force was comprised of 28 Central Bankers and Securities Regulators from 18 countries and the European Union. The Task Force's work has benefited greatly from input from other Central Bankers and Securities Regulators and operators of, and participants in, Securities Settlement Systems. In January 2000 the Task Force received input from Central Bankers and Securities Regulators representing 30 countries, as well as from representatives of the International Monetary Fund and the World Bank. In January 2001 the Task Force released a version of this report for public comment with approximately 90 comments being received. Comments were received from a wide variety of interested parties, mostly from Europe, but also from Asia, Africa and the Americas. As a result of these comments, several recommendations were modified to reflect the opinions and concerns of parties submitting comments.

The body of the Task Force's work is contained in 19 recommendations for the safe, effective and efficient operation of Security Settlement Systems. The 19 recommendations identify minimum standards that Securities Settlement Systems should meet. The recommendations are designed to cover systems for all types of securities operating in mature, transition and emerging financial markets.

4.01 Settlement Bank Qualifications

International standards and best practices, as recommended by IOSCO and the CPSS, were incorporated in the Settlement Bank Qualification RFP. IOSCO and CPSS recommendations were also included in the evaluation of RFP responses.

The incorporation of IOSCO and CPSS recommendations as qualification criteria was intended to provide a significant level of assurance that the Settlement Bank(s) selected by the SDC complied with generally accepted global standards in the processing of cash payments related to the settlement of securities transactions.

4.02 Settlement Cycle – Recommendation 3

The orderly conduct of business in financial markets requires the highest possible level of predictability in the settlement of securities transactions. The standardized time frame within which securities and proceeds must be available to buyers and sellers is commonly referred to as the Settlement Cycle. The Task Force's Settlement Cycle recommendation is stated as:

Rolling settlement should be adopted in all securities markets. Final settlement should occur no later than T+3. The benefits and costs of a settlement cycle shorter than T+3 should be evaluated.

The terminology used in the Task Force's recommendation is related to the relationship between the execution of a securities trade and the final settlement of the trade execution's contract requirements, or:

- T = Trade Date or the date on which a securities trade is executed
- T+1 = One (1) Business Day after Trade Date
- T+2 = Two (2) Business Days after Trade Date
- T+3 = Three (3) Business Days after Trade Date

The Joint Task Force recommends that securities resultant from an executed trade be transferred to the buyer and be irrevocably available to the buyer on the third business day following the execution of the trade (T+3). The Task Force also recommends that the trade's cash proceeds be paid to and be available to the seller on the third business day following the execution of the trade (T+3). A high level of availability for securities and cash enables participants in a financial market to formulate and execute market strategies and invests the financial market with a level of safety and reliability sufficient to attract and retain investors.

In order to manage the purchase and sale of securities, participants in a financial market must have a reasonably high level of assurance that securities purchased on a given day will be available for re-sale or other business purposes within a specific time frame. Conversely, sellers of securities in the financial marketplace must have a reasonably high level of assurance that the proceeds of the securities sale will be available for ancillary purchases in the marketplace or other business purposes within a specific time frame.

A financial market's adherence to, and enforcement of, a standard Settlement Cycle is critical not only to the orderly conduct of market participant business but also to the overall liquidity of the marketplace.

As recommended by the Task Force under a rolling settlement cycle, trades settle a given number of days after the trade date rather than at the end of an Account Period, thereby limiting the number of outstanding, unsettled trades and reducing aggregate market exposure. The longer the period from trade execution to trade settlement, the greater the risk that one of the parties may become insolvent or default on the trade, the larger the number of unsettled trades, and the greater the opportunity for the prices of the securities involved to move away from the original contract prices. Reducing the period between trade execution and trade settlement decreases the risk that non-defaulting parties will incur a loss when replacing securities involved in unsettled trade contracts.

4.03 Settlement Cycle – SDC Settlement Banks

The Settlement Bank Qualification RFP required respondent institutions to establish their ability to efficiently and cost-effectively process cash settlement payments within a T+3 Settlement Cycle.

Respondent institutions were required to provide specific processing data related to their Money Transfer operations with a specific emphasis on:

- Transfer Volumes
- Daily Turnaround
- Non-Processed Transfer Volumes
- Non-Processed Transfer Resolutions
- 1st, 2nd and 3rd Shift Time Parameters
- 1st, 2nd and 3rd Shift Staffing Levels
- Authorized Signature Personnel – All Shifts
- Money Transfer Software Capabilities
- Money Transfer Hardware Configuration(s)
- Telecommunications Capabilities
- S.W.I.F.T. Network Membership

Additionally, respondent institutions were required to provide comprehensive Disaster Recovery and Business Resumption Plans in order to insure the continuity of the Cash Settlement process within any given T+3 Settlement Cycle.

The ability of respondent institutions to provide sustained support of a T+3 Settlement Cycle was a benchmark of the qualification process. In anticipation of eventual migration to a T+1 Settlement Cycle, respondent institutions were also judged on their ability to sustain such a migration.

4.03 Delivery Versus Payment (DVP) – Recommendation 7

The settlement of securities transactions on a Delivery versus Payment (DVP) basis ensures that Principal Risk is minimized. The reduction of Principal Risk means there is minimal risk that securities could be delivered but payment not received, or vice versa. The Task Force's Recommendation 7 on DVP is stated as:

CSDs should eliminate Principal Risk by linking securities transfers to funds transfers in a way that achieves Delivery versus Payment.

In considering the Task Force's recommendation on DVP, it is important to note that the implementation of DVP procedures can minimize but not eliminate the risk that the failure of a depository participant could result in systemic disruptions. Systemic disruptions are still possible because the failure of a participant could produce substantial liquidity pressures or high replacement costs. Implementation of DVP by a depository also enables a depository's participants to offer their customers DVP services.

Implementation of DVP, in accordance with the Task Force's Recommendation 7, can be achieved in several ways. The methodologies vary according to whether the securities and/or funds transfers are settled on a gross, trade by trade basis or on a net basis, and in terms of the timing of the finality of transfers. Finality of transfer may be in real time throughout the day, or on an basis intraday at multiple times during the day, or only once at the end of the day. Whichever approach is taken, what is essential is that the technical, legal and contractual framework ensures that each transfer of securities is final if and only if the corresponding transfer of funds is final.

Compliance with the Task Force's Recommendation 7 DVP does not require actual simultaneous final transfers of funds and securities. In many markets when a depository does not itself provide cash accounts for settlement, it first blocks the underlying securities in the account of the seller or his custodian. The depository then requests transfer of funds from the buyer to the seller through an authorized settlement bank. The securities are delivered to the buyer or his custodian if and only if the depository receives confirmation of settlement of the cash leg from an authorized settlement bank. In such arrangements blocked securities can not be subject to a claim by a third party such as other creditors, tax authorities or even the depository itself, because exposure to such claims would give rise to Principal Risk.

4.04 Delivery Versus Payment (DVP) – SDC Settlement Banks

Qualified institutions' responses to the Settlement Bank Qualification RFP were required to provide information related Money Transfer authorization controls.

Information required included, but was not limited to:

- Data Link security algorithms
- Data encryption configuration(s)
- Authorization Personnel qualification procedures
- Institution's Errors & Omission Insurance coverage
- Institution/Client Security Procedures & Controls
- Error Correction procedures & Deadlines
- Support for SDC Funds Pending Disposition processing
- Funds Transfer Notification & Confirmation procedures

In assessing the qualifications of respondent institutions the SDC matched each institution's responses to the operational capabilities necessary to ensure the SDC's DVP processing deadlines. Institution responses were also evaluated according to the levels of data security and funds movement control employed by each institution.

4.04 Timing of Settlement Finality – Recommendation 8

The Task Force's Recommendation 8 regarding the Timing of Settlement Finality is stated as:

Final Settlement should occur no later than the end of the Settlement Day. Intraday or real-time finality should be provided where necessary to reduce risks.

In order to comply with the Task Force's Recommendation 8 the timing of Settlement Finality should be defined clearly to all the depository participants for both Free of Payment Transfers and Delivery versus Payment Transfers. Compliance with Recommendation 8 also requires that final transfers be completed by the end of each Settlement Day. Deferral of settlement to the next business day can substantially increase the potential for participant failures and the systemic disturbances, in part because the authorities tend to close insolvent institutions between business days.

4.05 Timing of Settlement Finality – SDC Settlement Banks

Although the Task Force's Recommendation 8 may appear to be obvious it is extremely important that the Settlement Bank(s) qualified by the SDC evidence the operational and technical capability necessary to complete all Funds Transfers related to Cash Settlement by the end of each Settlement Day.

As with many settlement critical tasks the ability of an institution to support effective exception processing is just as important as the ability to support the processing of regular settlement transactions.

The SDC's RFP required responding institutions to submit information related to the processing of normal settlement payments and the processing of exception payments. Information required included, but was not limited to:

- Internal Deadlines for normal transfer processing
- Internal Deadlines for processing:
 - ◆ Amended Instructions Transfers
 - ◆ Late Transfers
 - ◆ Suspended Transfers
- SDC Funds Pending Disposition Account processing
- Exception Processing Notification procedures
- Disaster Recovery Deadlines for normal transfer processing
- Business Resumption for Exception Transfer processing

The SDC's assessment of RFP responses included a thorough analysis of each institutions capability to process all Cash Transfers by the end of the depository's business day.

4.06 Protection of Cash Settlement Assets – Recommendation 10

The primary international standard related to the use of Settlement Banks is Recommendation 10 – Cash Settlement Assets. The recommendation states:

Assets used to settle the ultimate payment obligations arising from securities transactions should carry little or no credit or liquidity risk. If central bank money is not used, steps must be taken to protect CSD members from potential losses and liquidity pressures arising from the failure of the cash settlement agent whose assets are used for that purpose.

The settlement of payment obligations associated with securities transactions vary across financial markets and securities depositories. In some cases a market participant has a direct relationship with the depository and with the cash settlement agent, or agents, where the ultimate cash settlement occurs. In other cases a market participant has a direct relationship with the depository but has no direct relationship with the cash settlement agent. Instead the market participant uses one of several Settlement Banks to settle its payment obligations. The Settlement Banks ultimately settle the cash segment of the securities trade by transferring balances held with the cash settlement agent. These transfers are made through an inter-bank payment system, typically a Central Bank payment system. The use of a payment system for this purpose generally makes it systemically important. Therefore, the payment system used for such inter-bank transfers should adhere to the Core Principles for Systemically Important Payment Systems.¹

¹ *Core Principles for Systemically Important Payment Systems, Report of the Task Force on Payment System Principles and Practices*, Bank for International Settlements, Basel, Switzerland, July 2000

4.07 Protection of Cash Settlement Assets – SDC Settlement Banks

The SDC incorporated appropriate domestic business requirements, international best practices and global standards in its Settlement Bank Qualification RFP in order to insure that institutions selected were financially sound and evidenced a record of sound monetary operation.

Institutions responding were required to submit internal financial data and auditing reports attesting to their adherence to sound, standardized fiscal practices. Additionally, respondent institutions were required to submit a regulatory history including all reviews, problems and problem resolution with the Central Bank of Jordan. In performing its qualification assessment the SDC relied on information relevant to bank supervisory authorities.

As a result of the RFP process it can be stated that the SDC has taken extraordinary steps to insure that institutions selected as Settlement Banks are financial sound and have evidenced conduct of their business in a manner that is consistent with domestic and international best practices.

4.08 Systemically Important Payment Systems

It is important to note that the CPSS considers payment systems utilized for the settlement of securities transactions to be Systemically Important Payment Systems since the Core Principles also apply to the payments aspects of systems in which transfers of other financial assets, such as securities, and related transfers of funds are both settled. Such systems can raise financial stability issues in their own right, so it is important too that their overall design and operation should be safe and efficient.

The Bank for International Settlements, IOSCO and the CPSS of G10 recognize the basic principle that safe and efficient payment systems are critical to the effective functioning of a country's financial system and an increasingly globalized financial marketplace. Payment systems can be the means by which shocks can be transmitted across domestic and international financial systems and markets. Strong payment systems are, therefore, a key requirement in maintaining and promoting financial stability.

In recent years, a broad international consensus has developed on the need to strengthen payment systems by promoting internationally accepted standards and practices for their design and operation. An important initiative in developing international standards for payment systems was undertaken by the CPSS and has resulted in the formulation of 10 Core Principles for Systemically Important Payment Systems¹ (Core Principles).

¹ *Core Principles for Systemically Important Payment Systems, Report of the Task Force on Payment System Principles and Practices*, Bank for International Settlements, Basel, Switzerland, July 2000

Of the 10 Core Principles 6 Principles apply to the SDC's Settlement Bank Qualification process. Each of the applicable Principles were incorporated into the SDC's RFP document and the selection assessment process.

The incorporation was deemed necessary in order to insure that the banks selected were capable of supporting an internationally compliant cash payment systems. The Core Principles applicable to the SDC Settlement Bank Qualification are:

PRINCIPLE	REQUIREMENT
III	The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.
IV	The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.
V	A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.
VI	Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.
VII	The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.
VII	The system should provide a means of making payments which is practical for its users and efficient for the economy.

The Core Principles are included in this section of the report to illustrate the extent to which the SDC Settlement Bank selection process incorporated into its requirements international best practices for performance, operational and economic standards.

In order to provide the highest levels of operational safety and credibility the SDC, utilizing international best practice standards, identified the operational requirements and analyzed the risks that could be transmitted within the system. Once identified appropriate international standards were incorporated in the RFP document as Settlement Bank qualification requirements.

4.09 Operational Reliability – Recommendation 11

Continuity of the settlement process is critical to the orderly conduct of business in financial markets. Securities Settlement Systems must be reliable not only to insure continuity of settlement but to inspire confidence in the marketplace. Investors will be reluctant to participate in financial markets if the delivery of securities purchased and/or the receipt of payment for securities sold is in any way problematic. In order to insure reliability in financial markets the Task Force has formulated Recommendation 11 which states:

Sources of operational risk arising in the clearing and settlement process should be identified and minimized through the development of appropriate systems, controls and procedures. Systems should be reliable and secure and have adequate, scalable capacity. Contingency plans and backup facilities should be established to allow for timely recovery of operations and completion of the settlement process.

The implementation of reliably sound Securities Settlement Systems minimizes Operational Risk in financial markets. Operational Risk is the risk that deficiencies in information systems or internal controls, human errors or management failures will result in unexpected losses. As clearing and settlement systems become increasingly dependent on electronic information systems, the reliability of these systems is a key element in Operational Risk. The importance of Operational Risk lies in its capacity to impede the effectiveness of measures adopted to address other risks in the settlement process and to cause participants to incur unforeseen losses, which, if sizeable, could have systemic risk implications.

Operational Risk can arise from inadequate control of systems and processes; from inadequate operational management including lack of expertise, poor supervision or training and inadequate support resources. The impact of Operational Risk can be compounded by inadequate identification or understanding of risk control procedures required and from inadequate attention being paid to ensuring that procedures are understood and complied with.

The cash payment segment of a DVP settlement process is susceptible to high levels of operational failure which include errors or delays in message handling, transaction processing, system deficiencies or interruption, fraudulent activities by staff and disclosure of confidential information. Errors or delays in transaction processing may result from miscommunication, incomplete or inaccurate information or documentation, failure to follow instructions or errors in transmitting information.

Although automation has improved the speed and efficiency of the clearing and settlement process, it has brought its own risks of system deficiencies, interruptions and computer crime. These may arise from factors such as inadequate security, capacity or resilience of backup systems.

Operational failures in a Securities Settlement System are of special concern to financial market participants since such failures may lead to a variety of problems:

- Failed Settlements
- Late Settlements
- Participants' Financial Impairment
- Investor Claims
- Legal Liabilities & Court Proceedings
- Participants' Reputation & Financial Losses
- Ancillary Control System Deficiencies

A major operational failure at a securities depository or its Settlement Bank(s) can have significant adverse effects that can ripple throughout financial markets.

Generally accepted international best practices strongly recommend minimizing Operational Risk. It is recommended that Securities Settlement System operators should identify sources of Operational Risk, whether arising from the arrangements of the operator itself or from those of its participants, and establish clear policies and procedures to address those risks. It is also recommended that there should be adequate management controls and sufficiently well qualified personnel to ensure that procedures are implemented accordingly.

In its Recommendation 11 the Task Force advocates that all components of a Securities Settlement System should be secure and possess access controls, be equipped with adequate safeguards to prevent external intrusions, and provide audit trails. The Task Forces also recommends that Securities Settlement Systems be:

- Operationally Reliable
- Scalable
- Stress Tested
- Supported by tested Contingency Plans

In order to avoid disruption in the settlement process, contingency plans should be rehearsed and capacity stress-tested with backup systems being immediately available. While it may be possible to recommence operations following a system disruption with some data loss, contingency plans should ensure that, as a minimum, the status of all transactions at the time of the disruption can be identified with certainty in a timely manner. A reliable Securities Settlement System should be able to recover operations and data in a manner that does not disrupt settlement.

Increasingly, Securities Settlement Systems are dependent on electronic communications and as such there is a critical need to ensure the integrity of messages transmitted through the utilization of reliable networks, procedures and cryptographic techniques. In order to insure that Settlement Cycle processing deadlines are adhered to data must be transmitted accurately, promptly and without material interruption.

In all financial markets participants rely on Securities Settlement Systems for settling their financial market transactions. To ensure the accuracy and integrity of these transactions, international best practices recommend that the Securities Settlement Systems incorporate commercially reasonable standards of protection appropriate to the transaction values involved.

To ensure completion of daily processing, Securities Settlement Systems should maintain a high degree of operational resilience. Operational resilience is not just a matter of having reliable technology and adequate back up of all hardware, software and network facilities. It is also necessary to have effective business procedures and well trained and competent personnel who can operate the system safely and efficiently and ensure that the correct procedures are followed.

Operational resilience, as a combination of technical and non-technical requirements, helps to ensure that payments are correctly and quickly processed and that risk management procedures are consistently observed.

4.10 Operational Reliability – SDC Settlement Banks

Due to the importance of minimizing Operational Risk the SDC intentionally integrated appropriate global standards in its RFP document and in its subsequent assessment of responses. The RFP document's structure was modeled on sample templates utilized by major international donor agencies in order to insure that all relevant components were included. Additionally, the RFP incorporated within its structure requirements and recommendations as compiled by international regulatory and professional organizations.

As a result of the organizational structure and content of the SDC's Settlement Bank Qualification RFP and subsequent assessment process it can be stated with a high degree of confidence that institutions selected as SDC Settlement Banks comply with domestic and international standards for sound financial and business operation.

4.11 Access – Recommendation 14

Broad access to a depository's Securities Settlement System encourages competition among users and promotes efficient, low-cost clearing and settlement. It is important that in establishing a Settlement Bank Network a depository does not select Settlement Banks that would restrict or limit depository participants' access to the Settlement process. The Task Force's Recommendation 14 states:

CSDs and CCPs should have objective and publicly disclosed criteria for participation that permit fair and open access.

Although broad access to a depository's Securities Settlement System is highly desirable the level of access must be balanced to safeguard the systems reliability. It is strongly recommended that participants in a depository's Securities Settlement System have sufficient technical, business and risk management expertise, legal powers and adequate financial resources so that their participation does not generate unacceptable risk for the depository or for other system participants and their customers.

International best practices recommend that depositories establish criteria that balance fairly the benefits of openness against the need to limit participation to those with the necessary expertise, powers and financial resources. The precise criteria vary according to the role a participant plays in the Securities Settlement System. In financial markets where a depository incurs direct credit exposure to their members, participation may be based primarily on financial resource requirements. In financial markets where depository participants incur little or no liquidity and credit exposure to one another, participation tends to be based primarily on technical expertise and legal powers. In many markets a depository may establish more stringent criteria for participants that act as custodian or clear for other participants or for customers. General international best practices recommend that each depository consider carefully the risks to which the depository and its participants are exposed in determining appropriate access criteria.

Criteria that are unnecessarily restrictive can reduce efficiency and generate risk by concentrating settlement activity and exposure within a small group of participants. The more restrictive the criteria, the greater the importance of a depository assuring itself that its participants can control the risks generated by their customers. To avoid discriminating against classes of users and introducing competitive distortions, criteria should be fair and objective. Participation criteria should be clearly stated and publicly disclosed, so as to promote certainty and transparency. Depositories should have procedures facilitating the orderly exit of participants that no longer meet membership criteria, and exit procedures should also be publicly disclosed.

4.12 Access – SDC Settlement Banks

Due to the importance of maintaining open and fair access to the Settlement process in Jordan, the SDC exercised care to insure that the Settlement Bank(s) selected would not impose any undue restrictions on participation by SDC members. The intent and purpose of the Task Force's Recommendation 14 was carefully observed in constructing the RFP's requirements and in the assessment of responses to the RFP.

Due to the care and diligence exercised by the SDC it can be stated that the Settlement Banks selected as a result of the RFP process do not impose any undue restrictions on financial market participants access to the Settlement process.

4.13 Efficiency – Recommendation 15

Compliance with international standards require that settlement systems be cost-effective and efficient in order to support the orderly conduct of business in financial markets and manage risk. Task Force Recommendation 15 states:

While maintaining safe and secure operations, Securities Settlement Systems should be cost-effective in meeting the requirements of users.

When a depository is assessing the efficiency of settlement systems it is important that the needs of users and the costs imposed on them be carefully balanced with the requirement that the system meet appropriate standards of safety and security. If systems are inefficient, financial activity may be distorted. However, it must also be remembered that the first priority of a Securities Settlement System is to assure domestic and foreign participants in financial markets that their trades will consistently settle on time according to the agreed terms of the transaction. If market participants view a settlement system as unsafe, they will not use it, regardless of the efficiency provided by the system.

The assessment of a settlement system's efficiency can be difficult due to an individual financial market's definition of efficiency and the large number of factors that can be used to assess the efficiency. Accordingly, the focus of any assessment should largely be on whether a depository as system operator or other relevant party has in place the mechanisms to periodically review the service levels, costs, pricing and operational reliability of the system.

In global markets it is generally required that a Securities Settlement System should seek to meet the service requirements of system users in a cost-effective manner. This requirement includes meeting the needs of its users, operating reliably and having adequate system capacity to handle both current and potential transaction volumes. When looking at the overall costs of settlement systems, it is important to include both the direct costs of operating any central facilities and indirect costs.

4.14 Efficiency –SDC Settlement Banks

In issuing its RFP and evaluating responses the SDC incorporated respondent requirements related to cost-effective and efficient operation of the Settlement Bank Network. In their responses to the RFP institutions wishing to qualify as a Settlement Bank were required to provide operational details related to the costs associated with their Money Transfer operations. Additionally, respondents were required to provide the

SDC with operational reliability data such as average and maximum throughput capacities as well as system downtime history.

The SDC was especially careful to insure that Settlement Cycle Cash Movement deadlines were included in the RFP and were clearly stated. Respondents were also required to categorically state their unqualified operational ability and capacity to meet the deadlines. In order to obtain an understanding of respondents' confidence in the capacity of their systems, a specific question was included in the RFP requesting a respondent's willingness to post a Performance Bond that could be invoked in favor of the SDC in instances where an institution's system failed to perform according to the SDC's Settlement Cycle deadlines.

As a result of the RFP selection process it can be stated that the Settlement Banks chosen by the SDC meet generally accepted international standards for cost-effective and efficient Securities Settlement Systems.

4.15 Communications Procedures & Standards – Recommendation 16

In order to effectively and safely settle securities transactions all financial market participants in a settlement system must be able to communicate in a quick, reliable and accurate manner. It is therefore required that Securities Settlement Systems apply consistent communication procedures and standards relating to securities messages, securities identification processes and counterparty identification.

The Task Force's Recommendation 16 states that:

Securities Settlement Systems should use or accommodate the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions.

Although Recommendation 16 specifically mentions cross-border transactions, the SDC decided to include the recommendation in order to insure compliance with generally accepted global standards and to accommodate, in the future, the settlement of securities transactions conducted on a cross-border basis.

In order to comply with generally accepted global standards it is required that all participants in a Securities Settlement System have the capacity to communicate in a quick, reliable and accurate manner in order to efficiently settle their obligations in domestic and cross-border securities transactions. Securities Settlement Systems must therefore apply consistent communication procedures and standards relating to securities messages, securities identification processes and counterparty identification.

Compliance with international best practices requires that internationally recognized message, securities numbering procedures and standards be utilized for the settlement of domestic and cross-border securities transactions. International standards include, but are

not limited to, the International Numbering (ISO 6166) and International Message standards (ISO 15022). Not all Securities Settlement Systems may wish to use these international procedures and standards for purely domestic securities transactions. However, it is strongly recommended that if a Securities Settlement System wishes to attract and retain international investors it will need to be able to process messages written according to these procedures and standards. It is possible for individual settlement systems to comply with international standards can by developing systems for the efficient translation or conversion of these message procedures and standards into domestic equivalents and translating domestic acknowledgment, confirmation and other messages and securities identification codes into the relevant international procedures and standards. Alternatively, a Securities Settlement System may widen the scope of messages accepted and generated to include generally accepted international procedures and standards.

The requirement that SDC designated Settlement Banks meet relevant international communications standards was deemed to be of importance in the SDC's efforts to establish a Securities Settlement System that would attract and retain international capital. Settlement Bank compliance with international communications procedures was also deemed to be important by the SDC in light of the increasing regionalization of securities trading. In the past five years many medium-sized, individual country markets have utilized cross-border listing arrangements to form regional markets in order to increase liquidity and to compete effectively with larger, money-center markets. The prime example of regionalization is EuroNext which has created collective strength, increased liquidity and implemented significant operational economies of scale in order to effectively compete with London and Frankfurt.

Based on the effectiveness of regionalized securities trading it is reasonable to assume that financial markets in the Middle East will establish a regional market in order to compete effectively for international capital. In anticipation of regionalized trading it is prudent for the SDC to insure that its settlement system, including Cash Settlement through its Settlement Banks, is capable of supporting the settlement of cross-border transactions.

4.16 Communications Procedures & Standards – SDC Settlement Banks

The SDC's RFP for Settlement Banks included specific requests for telecommunications procedures and standards incorporated in respondent institutions' Money transfer Systems. Inclusion of telecommunications procedures and standards utilized by potential Settlement Banks was deemed important in assuring that the SDC and its domestic and international participants would have the capability to effectively and safely settle securities transactions by communicating in a quick, reliable and accurate manner.

The RFP process included requirements that respondent institutions provide specific technical information related to telecommunications procedures and standards incorporated in their Money Transfer Systems.

Information requested related to the inclusion of ISO Standards 6166 and 1502 as well as the capability to transmit and receive messages in SWIFT (Society for Worldwide Interbank Financial Telecommunication) format. The inclusion of SWIFT messaging capability is important since the formats are generally accepted as the international standard used by 7,000 financial institutions in 198 countries.

As a result of the SDC's Settlement Bank RFP process it can be stated that the institutions selected comply with generally accepted telecommunications procedures and standards. It can also be stated that the requirement to be compliant with generally accepted telecommunications procedures and standards will provide participants in the Jordanian financial market with a high level of safety, security and reliability in the Cash Settlement of securities transactions. Compliance with the Task Force's Recommendation 16 will also serve to attract international investors to the Jordanian markets.

4.17 Regulation & Oversight – Recommendation 18

Securities regulators and Central Banks share the common objective of promoting the implementation of measures that enhance the safety and efficiency of Securities Settlement Systems.

The standards for regulation and oversight are included in the Task Force's Recommendation 18 which states:

Securities Settlement Systems should be subject to transparent and effective regulation and oversight. Central Banks and securities regulators should cooperate with each other and with other relevant authorities.

The primary responsibility for ensuring a Security Settlement System's observance of domestic rules and regulations lies with the designers, owners and operators of settlement systems. It is the responsibility of securities regulators and the Central Bank to provide the regulation and oversight needed to ensure that designers, owners and operators fulfill their responsibilities.

Inclusion of the Central Bank in the regulation and oversight of a Securities Settlement System is required to insure the sustained financial soundness and operational reliability of banking institutions serving as Settlement Banks.

In order to qualify as respondents to the SDC's Settlement Bank RFP institutions were required to be enterprises licensed by the Central Bank of Jordan and currently be in good standing. The RFP document contained a section related to respondent institutions' regulatory record with the Central Bank of Jordan and were required to provide a history of regulatory proceedings over the previous three (3) years.

In order to provide for sustained regulation of the Settlement Banks it is the intention of the SDC to review each Settlement Bank's standing with the Central Bank of Jordan on a periodic basis.

4.18 Regulation & Oversight – SDC Settlement Banks

On completion of the RFP process it can be stated that the institutions selected as SDC Settlement Banks are licensed by the Central Bank of Jordan, are currently in good standing and do not have any significant violations or breaches of conduct on their regulatory record.

The provision of compliance information with the rules and regulations of the Central Bank of Jordan and submission of the RFP-required independent auditor's report has provided a high level of assurance to the SDC and its participants of the selected Banks' financial soundness and operational reliability.

4.19 Summary

Steps taken by the SDC in the issuance of its Settlement Bank RFP and the assessment of responses received provides financial market participants in Jordan with substantial assurance that the institutions selected comply with generally accepted global standards.

In an increasingly integrated global economy, financial market stability is most likely to be achieved when international prudential standards are met and when markets operate competitively, professionally and transparently, according to sound principles and practices.

It was fully understood by the SDC that the implementation of safe and reliable Security Settlement Systems unavoidably entails significant resource costs. In making choices about the design and operation of settlement systems, it is essential that unnecessary costs be avoided and that trade-offs between risk reduction and service costs be weighed carefully. A primary guiding tenet in the RFP process was the operating assumption that efficient settlement systems contribute to well functioning financial markets. Moreover, costly but relatively low-risk settlement systems may encourage market participants to utilize comparatively cheaper but perhaps riskier settlement mechanisms, resulting in higher overall systemic risks.

As a result of exercising the highest levels of professional diligence the SDC has provided the marketplace and its participants with every reasonable assurance that reliable and secure Cash Settlement will be provided in an efficient and cost-effective manner. The SDC has also taken a major step in increasing the Jordanian financial market's compliance with generally accepted international standards.

Based on the development levels of the selected Settlement Banks and testing conducted by the SDC, it is reasonably to project that the SDC's Cash Settlement Service will be qualified and operating with the SDC's initial Settlement Bank (Housing Bank for Trade & Finance) commencing February 2, 2003.

Appendix A – SDC Settlement Banks' Profiles



The Housing Bank for Trade & Finance

In the 1960s and 1970s Jordan encountered a serious problem in providing housing finance due to the limited resources available in the banking sector. The Three-year Development Plan (1973-1975) recommended that a bank specializing in housing financing should be established in Jordan to support the country's banking institutions in providing financing for residential units. In creating a specialized housing finance institution the Government of Jordan intended to address the existent housing crisis. In 1973 The Housing Bank was founded as a public shareholding company, specializing in housing finance, under Temporary Special Law No. 41/1973.

The Housing Bank played a significant role in meeting the housing finance needs of Jordanian citizens, especially low income groups. The institution granted over two billion Jordanian Dinar (JOD) in housing & development loans which contributed to financing the construction and acquisition of 100 thousand dwellings throughout Jordan. The Housing Bank has established a business model that has been employed by the World Bank's International Finance Corporation (IFC) in many third world countries.

In the early 1980s the Housing Bank began to enter the commercial banking marketplace and managed to procure a 10% to 13% share of the local commercial banking market. At the same time, the institution expanded beyond traditional banking services began to offer non-traditional banking and investment services. In order to support its expansion the Housing Bank developed and implemented a technology base, supported by qualified staff, to offer a wide range of commercial banking services.

In May 1997, Law NO. 16 of 1997 was issued converting the Housing Bank into a full – fledged commercial bank. In 2000 institution changed its name to The Housing Bank for Trade * Finance (HBTF) in keeping with its transition to a full service bank offering a comprehensive range of commercial & investment banking operations.

In terms of capital/asset soundness *The Banker* magazine, in July 2001, ranked the Housing Bank as 1st in the Jordanian market, 5th among Arab Banks and 54th among the largest banks in the world.

Financial Summary

Category	JOD*	USD**
Assets/Liabilities	1,708.8	2,392.3
Loans & Credit Facilities - Net	584.7	818.6
Equity Investments – Net	81.2	113.7
Deposits	1,313.2	1,838.5
Shareholder Equity	256.5	359.1
Net Interest Revenues	62.0	86.8
Net Income After Tax	21.9	30.7

*In millions

** In millions at 1 JOD = 1.4 USD

Since its inception the HBTF has demonstrated a sustained growth pattern as illustrated by the chart, below.

Growth Summary*

Category	1997	1998	1999	2000	2001
Cash & At Banks	497.8	493.6	658.0	721.9	650.7
Total Loans & Credit Facilities	658.0	677.0	609.1	556.6	584.7
Customer Deposits	973.2	1,045.5	1,123.1	1,209.4	1,239.3
Interbank Deposits	14.6	21.8	59.9	56.4	73.9
Total Deposits	987.8	1,067.3	1,183.0	1,265.8	1,313.2
Capital & Reserves (Shareholder Equity)	212.4	221.9	239.5	236.3	256.5
Net Profit – After Tax	15.7	24.6	17.6	11.8	21.9
Total Assets/Liabilities	1,350.8	1,417.7	1,549.0	1,623.2	1,708.8

* In Millions of JOD

Financial Ratios

Category	1997	1998	1999	2000	2001
Return on Assets	1.6%	2.3%	1.8%	1.0%	1.8%
Return on Equity	13.5%	14.6%	11.4%	6.9%	12.2%
Capital Adequacy	31.6%	30.3%	32.0%	31.7%	30.6%



Citibank N.A. Amman, Jordan

A Branch of Citibank
A Member of Citigroup



Citibank N.A., Amman, Jordan is a Branch of Citibank and a member of Citigroup. The bank was established in 1974, is a fully licensed commercial bank in Jordan and is responsible for Citibank's business in Jordan, Syria and the Palestine National Authority.

The bank utilizes fully automated systems to support: (i) custody safekeeping and settlements, (ii) Electronic Banking Services for local and foreign currency, and (iii) Correspondent Banking Services including Electronic Banking for cash and trade for banks in the Palestine National Authority.

Citibank, Jordan has been offering Custody Services since 1990. In 1992, under the guidance of Citibank Network Management in New York, local procedures were reviewed and updated and the service was fully automated following the installation of specialized software developed by Citibank for implementation at all Citibank branches worldwide.

The bank's Custody Services currently include:

- Safekeeping
- Securities Clearing & Settlement
- Corporate Action Management
- Income Collection
- Cash & Securities Accounts
- SWIFT Messaging
- Portfolio Valuation
- Proxy Management
- Foreign Exchange Facilities
- Domestic & International Funds Transfer

In 2001 the assets of Citibank N.A. Jordan amounted to 153.5 million JOD and the institution recorded a 14 per cent increase in profits with net operational revenues rising by 10 per cent. The bank's net profits amounted to JD1.7 million while its operational revenues totaled JD4.75 million.

The bank's pre-tax profits in 2001 amounted to 2.3 million JOD representing an increase 16 per cent while deposits at the bank totaled 113 million JOD. Net credit facilities extended by the bank totaled 28.1 million JOD.



Citigroup Inc. is a bank holding company within the meaning of the U.S. Bank Holding Company Act of 1956 (BHC Act) that is registered with, and subject to examination by, the Federal Reserve Board. Certain of the company's subsidiaries are subject to supervision and examination by their respective federal and state authorities. The company provides diversified financial services to consumer and corporate customers with 192 million customer accounts in 100 countries and territories. Citigroup, incorporated in 1988 under the laws of the State of Delaware, provides financial services that include consumer banking and credit, corporate and investment banking, insurance, securities brokerage and asset management. Major companies operating within Citigroup include Citibank, CitiFinancial, Primerica, Salomon Smith Barney, and Travelers.

Citigroup Inc. dates back to the history of Citibank, which began in 1812; Travelers which was established in 1864; Smith Barney founded in 1873; and Banamex, which was formed in 1884 as a result of the merger of Banco Nacional Mexicano and Banco Mercantil Mexicano.

At December 31, 2001, the Company had approximately 145,000 full-time and 4,000 part-time employees in the United States and approximately 123,000 employees outside of the United States. The principal executive offices of the company are located at 399 Park Avenue, New York, New York.